STATE ACTIONS
Governor's Office of Planning and Budget
Resource Development Coordinating Committee
DNR/Natural Resources Policy Group
5110 State Office Building
Salt Lake City, Utah 84114
(801) 537-9230

1. Administering State Agency Utah Division of Wildlife Resources 1594 West North Temple Suite 2110, Box 146301 Salt Lake City, Utah 84114-6301	**2. Approximate date project will start:** 4/1/05 or upon review by RDCC and Areawide Clearinghouse(s)
3. Areawide clearinghouse(s) receiving state action: **(to be sent out by agency in block 1)** Bear River Association of Governments; Mountainland Association of Governments; Uintah Basin Association of Governments	
4. Type of action: / / Lease / / Permit / / License / / Land Acquisition / / Land Sale / / Land Exchange / X / Other Transplants of Greater Sage-Grouse (*Centrocercus urophasianus*)	
5. Title of proposed action: Transplants of Greater Sage-Grouse (*Centrocercus urophasianus*) to the Strawberry Valley study area.	
6. Description: See attached proposal for project details.	
7. Land affected (site location map required) (indicate county) - include UTM coordinates where possible Sage-Grouse will be captured from Bureau of Land Management, U.S. Forest Service and State Institutional Trust Lands on Parker Mountain located in south-central Utah, from Blue and Diamond Mountains in the Uintah Basin, from west Box Elder County and from private land (Deseret Land and Livestock Ranch) in Rich County. Captured sage-grouse will be released on U.S. Forest Service lands in the Strawberry Valley of Wasatch County and on private land in Duchesne County where the landowner has agreed to releases. See attached location map.	
8. Jordan River Natural Areas Forum review - If the proposed action affects lands within the Jordan River Natural Areas Corridor. **(to be sent out by agency in block 1). (see Instructions II below).**	

9. Has the local government(s) been contacted? If yes,
a. How was contact made?
b. Who was contacted?
c. What was the response?
d. If no response, how is the local government(s) likely to be impacted?
Personnel from the Utah Division of Wildlife Resources regional office in Springville, Utah presented the portion of this proposal to transplant birds from Parker Mountain to Wasatch County to the Wasatch County Commission at one of their regularly scheduled meetings in 2002. The commission was supportive of this effort and endorsed it. Personnel from the Utah Division of Wildlife Resources regional office in Vernal, Utah will present this proposal to the Duchesne County Commission at one of their upcoming regularly scheduled meetings.

10. Possible significant impacts likely to occur:
None anticipated. This project constitutes trapping of sage-grouse from existing populations and subsequent release into an existing population.

11. Name and phone of district representative from your agency near project site, if applicable:
Anis Aoude, Regional Wildlife Manager, Utah Division of Wildlife Resources, Springville, Utah;
(801) 491-5678
Boyde Blackwell, Regional Wildlife Manager, Utah Division of Wildlife Resources, Vernal, Utah;
(435) 781-9453
Justin Dolling, Regional Wildlife Manager, Utah Division of Wildlife Resources, Ogden, Utah;
(801) 476-2765

12. For further information, contact:	**13. Signature and title of authorized officer**
Dean Mitchell Upland Game Program Coordinator Salt Lake City, Utah **Phone:** (801) 538-4786 **E-mail:** deanmitchell@utah.gov	Dean Mitchell **Date:** March 1, 2005

INSTRUCTIONS

I. Whenever a State agency proposes or is administratively responsible for an action not exempted, it shall complete a State Action form and forward one copy to the Governor's Office of Planning and Budget and the effected areawide clearinghouse(s). All State Actions reviewed by the Resource Development Coordinating Committee (RDCC) within 30 days of receipt will forward all comments and recommendations within the 30-day review period to the initiating State agency. State Agencies may request an extension to the 30-day review period, if additional information is needed.

Questions encountered with the areawide clearinghouse review should be directed to the areawide clearinghouse. The Governor's Office of Planning and Budget will wait for the affected areawide clearinghouse(s) to complete their review before issuing a final clearance to the originator on this STATE ACTION.

II. If the proposed action affects lands within the Jordan River Natural Conservation Corridor (see http://www.mitigationcommission.gov/wetlands/pdf/wetlands_jornac.pdf), a copy of this completed

form must also be submitted to:

Jordan River Natural Areas Forum
C/O State and Local Planning
Governor's Office of Planning and Budget
116 State Capitol
Salt Lake City, UT 84114

Questions regarding JRNACC or JRNAF should be directed to 538-1027.

UTAH STATE AND AREAWIDE CLEARINGHOUSES

	AREAWIDE CLEARINGHOUSES	MONTHLY MEETINGS	COUNTIES
1	Bear River Association of Governments Roger Jones, Executive Director 170 North Main, Room 2 Logan, UT 84321 Phone (435) 752-7242	3rd Tuesday 1:00 p.m.	Box Elder Cache Rich
2	Five County Association of Governments John Williams, Executive Director Post Office Box 1550 St George, UT 84771-1550 Phone (435) 673-3548	2nd Wednesday 1:30 p.m.	Beaver Garfield Iron Kane Washington
3	Mountainland Association of Governments Darrell Cook, Executive Director 586 East 800 North Orem, UT 84097-4146 Phone (801) 229-3800	4th Wednesday 7:00 p.m.	Summit Utah Wasatch
4	Six County Association of Governments Russell Cowley, Director Post Office Box 820 250 North Main Richfield, UT 84701 Phone (435) 896-9222	2nd Wednesday 1:00 p.m.	Juab Millard Piute Sanpete Sevier Wayne
7	Southeastern Utah Association of Governments Bill Howell, Executive Director 375 S. Carbon Avenue Post Office Box 1106 Price, UT 84501-0881 Phone (435) 637-5444	3rd Thursday 1:00 p.m.	Carbon Emery Grand San Juan
5	Uintah Basin Association of Governments Curtis Dastrup, Executive Director 855 East 200 North (112-3) Roosevelt, UT 84066 Phone (435) 722-4518	3rd Thursday 1:00 p.m.	Daggett Duchesne Uintah
6	Wasatch Front Regional Council Glen H. Burton, Chairman 295 N. Jimmy Doolittle Road Salt Lake City, UT 84116 Phone (801) 363-4250	4th Thursday 3:00 p.m.	Davis Morgan Salt Lake Tooele Weber

Transplants of Greater Sage-Grouse (*Centrocercus urophasianus*) to the Strawberry Valley .

A Proposal

Submitted by
Utah Division of Wildlife Resources

February 8, 2005

Introduction

This is a proposal for transplanting Greater Sage-Grouse (*Centrocercus urophasianus*) from populations of ≥500 breeding birds throughout the state (i.e. western Box Elder County, Deseret Land and Livestock in Rich County, Blue and Diamond Mountains in Uintah County, and Parker Mountain in Wayne County [already authorized by the Utah Wildlife Board]) to the Strawberry Valley Sage-Grouse population in Wasatch and Duchesne Counties for the purposes of augmenting a small existing population of grouse and assessing the effectiveness of transplants. A brief description of the history, study area, methods, preliminary results, and continued proposed translocations are contained hereafter.

Historical Distribution

Early pioneer journals suggest that Sage-Grouse (*Centrocercus* spp.) were abundant in the early 1800s in Utah. It was mentioned by early pioneers that wherever there was sagebrush (*Artemisia tridentata*) there were Sage-Grouse (Utah Fish and Game 1950, Beck and Mitchell 1997). Historically, it is thought all 29 counties in Utah provided adequate habitat for Sage-Grouse. In general, Sage-Grouse were found from 4,000 to over 9,000 feet in elevation in mainly the Great Basin and the Colorado Plateau geographic regions. Recent research indicates that there are two species of Sage-Grouse found in Utah, the Greater Sage-Grouse and the Gunnison Sage-Grouse (*C. minimus*) (Young et al. 1994).

Current Distribution

It is estimated that Greater Sage-Grouse occupy only 41.4 percent, and Gunnison Sage-Grouse occupy only 30.7 percent, of the habitat in Utah they once did (Beck et al. 2003). Habitat loss, fragmentation and degradation are suspected as the main causes of population decline. Large fragments of Sage-Grouse habitat have been lost throughout Utah to a variety of developments that eliminate sagebrush. Thousands of acres of Sage-Grouse habitat have been converted into dense stands of exotic cheat grass (*Bromus tectorum*) by wildfire and are now unsuitable for Sage-Grouse.

Currently, Sage-Grouse are found in 26 counties with active leks counted in 20 counties. Sage-Grouse have been extirpated in Davis, Salt Lake, and Washington counties. The largest populations are found in western Box Elder County, Rich County,

Blue and Diamond Mountains (Uintah County), and on Parker Mountain (Wayne County). Other smaller populations are found scattered in the central and southern parts of the state.

Gunnison Sage-Grouse are found south and east of the Colorado River in southeastern Utah and Greater Sage-Grouse are found throughout the remainder of the state. A small population of Greater Sage-Grouse is found on Hatch Point south and east of the Colorado River as a result of a transplant in the early 1970s. Grouse have not been seen on the Hatch Point lek since 1996 when only one male was observed.

Species of Special Concern and Endangered Species Status

Sage-Grouse are listed on the Utah Sensitive Species List as a Species of Special Concern SP/SD: Due to declining populations and limited distribution. The Gunnison Sage-Grouse is currently listed as a candidate species under the Federal Endangered Species Act.

Conservation Planning Efforts

A statewide Utah Sage-Grouse Working Group was established in 1998 to initiate and maintain a dialog and cooperative working relationship between agencies and interested parties pertaining to all aspects of Sage-Grouse and their management.

The statewide working group compiled a statewide Strategic Management Plan for Sage-Grouse that divides Utah into 13 Sage-Grouse management units. Local working groups will be established to cover the 13 management units. Local working groups will develop specific, local, community-based conservation plans for Sage-Grouse populations within their respective units.

Three Community-based Conservation Extension Specialists have been hired by the Utah Division of Wildlife Resources and Utah State University. The Community-based Conservation Extension Specialists are responsible for establishing and facilitating all local working groups. To date, local working groups have been established in the following Sage-Grouse management units: Southwest Desert (2003), Strawberry Valley (2003), Uintah Basin (2003), West Desert (2003), Rich County (2002), Box Elder (2001), Color Country/South-Central Valleys (2001), Parker Mountain/Johns Valley (1998), and San Juan (1997).

Study Area and the Need for Sage-Grouse Transplants

Greater Sage-Grouse were once abundant in Strawberry Valley (see attached location map). Flocks of 400-500 grouse could be seen during the fall on Windy Ridge, and signs along Highway 40 read, “SLOW DOWN FOR SAGE GROUSE CROSSING HIGHWAY” (Griner 1939). Griner (1939) estimated that there were about 3,500 Sage-Grouse in Strawberry Valley in 1937. Prior to the first translocation in 2003, the

breeding population was estimated at 100-120 birds (Baxter and Flinders 2003). Several factors have likely contributed to the decline of Sage-Grouse in Strawberry Valley (presented in approximate chronological order): habitat degradation associated with heavy livestock grazing; habitat degradation associated with lowered water tables resulting from water diversions and down cutting of streams; aerial spraying of herbicides in willow and sagebrush vegetation types to increase forage capacity for livestock; habitat loss resulting from reservoir expansion; habitat disturbance resulting from summer home development; and predation by the nonnative red fox (*Vulpes vulpes*) (Griner 1939, Smith and Greenwood 1983, Welch et al. 1990, U.S. Forest Service 1990, Bunnell 2000).

The Strawberry Valley Sage-Grouse population is migratory. Birds remain in the valley near the reservoir until snows get too deep. Then, some birds migrate to lower elevations east of the reservoir. Much of the winter range east of the reservoir is on private lands. In 2000, aerial spraying of Tebuthiron (an herbicide used to kill sagebrush) on some of these private lands negatively affected habitat conditions within the population's traditional winter range (Bambrough and Flinders 2001). Only one lek has been used in Strawberry Valley since 1985, although Sage-Grouse radio-collared on the Strawberry Valley lek have been found at two smaller leks located east of Strawberry Valley (Bambrough and Flinders 2001).

The original Strawberry Dam was completed by 1911, inundating approximately 8,400 acres of riparian, meadow, and sagebrush habitat within Strawberry Valley. An additional dam (Soldier Creek Dam), located about 5 miles to the east of Strawberry Dam, was completed in 1973. The Strawberry Dam and Indian Creek Dike were removed in 1985, connecting the original Strawberry Reservoir and Soldier Creek Reservoir and resulting in a reservoir covering 17,160 acres. In 1988, management authority for 57,000 acres of land within the Strawberry watershed was transferred from the Bureau of Reclamation to the U.S. Forest Service, Uinta National Forest. Lands within much of the 57,000-acre Strawberry Valley Management Area were in a seriously degraded environmental condition when this area was transferred to the Uinta National Forest (U.S. Forest Service 1990, Utah Reclamation Mitigation and Conservation Commission and U.S. Forest Service 1997). Water diversions, intensive livestock grazing, down cutting of streams, and repeated aerial herbicide spraying of willow and sagebrush vegetation types resulted in significant degradation of wetland habitats within Strawberry Valley. The Uinta National Forest began a large-scale restoration effort within the Strawberry Valley Management Area in 1990 that included suspending livestock grazing, stream-bank stabilization, noxious weed control, seeding of overgrazed upland sites, willow and sedge revegetation, and road management (U.S. Forest Service 1995).

Field work for a project designed to learn more about the Strawberry Valley Sage-Grouse population was initiated in 1998. This project continues today and has been funded through a cooperative agreement among the Utah Reclamation Mitigation and Conservation Commission, Brigham Young University, the U.S. Forest Service and the

Utah Division of Wildlife Resources. Objectives of the project have been to obtain baseline population and habitat selection data, identify factors limiting Sage-grouse survival, mitigate those factors, and recover the population in the Strawberry Valley. Initial research from this study documented high rates of predation by red foxes on adult Sage-Grouse (Bunnell 2000). Red foxes did not occur in Strawberry Valley historically and did not become common in the valley until the mid- to late-1980s. Red fox population control measures by USDA Wildlife Services began in 1999 and have continued to the present day. Mortality rates of adult radio-collared grouse have decreased from 71% in 1998 before control to an average of 35% after 4 years of steady control. However, brood counts for resident hens remain low (0.75 juveniles/hen). Current and future efforts to increase juvenile recruitment will focus on increased predator control and limited mechanical thinning of dense sagebrush stands to improve brood-rearing habitat.

A stable Sage-Grouse population is considered by biologists to consist of at least 500 breeding birds. The Strawberry Valley Sage-Grouse population is well below this. As such, the Strawberry population is at a greater risk of extirpation than a population consisting of at least 500 breeding birds.

To date, biologists have been hesitant to transplant Sage-Grouse anywhere within Utah. Concerns for impacting a local grouse population's unique genetic makeup have been high. Differences between the strutting, posturing and vocalizing routines between Sage-Grouse populations have also been of concern.

Recently the University of Denver conducted a DNA analysis on Utah Sage-Grouse populations that demonstrates that birds found throughout the state of Utah, with the exception of the Gunnison Sage-Grouse found in San Juan County, are genetically compatible with birds found in Strawberry Valley (Sara Oyler-McCance In Press).

Barber (1991) compared the strutting, posturing, and vocalizing behaviors of Sage-Grouse from 5 distinct locations: Box Elder County, Uintah County, Tooele County, Wayne County, and San Juan County. His data show that the San Juan County birds were different from the other four Sage-Grouse populations in the aforementioned behaviors. Later, Welch et al. (1995) compared the same behaviors between Sage-Grouse on Parker Mountain and Sage-Grouse in Strawberry Valley. The results of both studies indicated that with the exception of the San Juan County birds, all other Sage-Grouse in the state are compatible in each of these behaviors.

In order to test whether transplants from more than one source population can be successful, and to increase the number of birds being translocated to the Strawberry Valley, we propose transplanting sage grouse from multiple populations that contain ≥500 breeding birds. By transplanting from multiple populations, the consistent pressure from annual trapping of one sage grouse population is diminished. It will also increase gene flow and overall genetic diversity of the population. It will allow us to test for differences in the responses of birds translocated from various parts of the state.

Transplanting from multiple populations will help us evaluate the overall viability of intrastate movements of Sage-Grouse for small and declining population augmentation.

The purpose of transplants will be to supplement the existing population of Greater Sage-Grouse found in Strawberry Valley and to help the population to expand to a level of at least 500 breeding birds. Transplants are only one aspect of a myriad of strategies being used to increase the population. Predator management activities, habitat protection, habitat improvements, and disease monitoring are all being conducted in an effort to help the population increase.

Methods

Transplants from populations containing ≥500 breeding birds will occur annually as needed over the next five years during the months of February-May. If the Strawberry Valley population increases to ≥500 breeding birds before 5 years are up, transplants will be discontinued. Up to 70 birds per year will be transplanted to the Strawberry Valley from each of two source populations (35 birds per year from each population). Trapping will be conducted by the Utah Division of Wildlife Resources personnel, with assistance from Brigham Young University personnel and others from Sage-Grouse local working groups and federal natural resource management agencies. Sage-Grouse will be captured primarily using spotlights and dip nets. All releases of Sage-Grouse will occur within the area of the Strawberry Valley population in Wasatch and Duchesne Counties.

Monitoring and Preliminary Results

Since April of 2003 a total of 75 birds (38 in 2003 and 37 in 2004) have been translocated from the Parker Mountain to the Strawberry Valley. All birds released were fitted with radio transmitters to allow for assessment of dispersal, migrations, seasonal habitat selection, survival, flocking with resident birds, and reproductive efforts. Preliminary results from the first 18 months of data collection show a marked increase in Sage-Grouse numbers. Excluding all resident Sage-Grouse recruitment and reproductive effort, the numbers of Sage-Grouse in the Strawberry Valley have increased from an estimated 100-120 to 210-230 birds. These numbers reflect a doubling of the population in 18 months.

Survival of translocated birds has been high. During the first translocation, 61% of the translocated Sage-Grouse survived the first year in the Strawberry Valley. Wallestad (1975) and Zablan (1993) reported average annual hen survival of 35-40% and 55% respectively. The predator control program, already in place, has been effective in reducing the risk of death during breeding, nesting, and brood-rearing time periods.

Summer dispersal of Sage-Grouse was varied and spread. It appeared that no bird attempted to return to the site of capture. In 2004, at least 80% of the hens translocated in 2003 returned to the release site/lek in the spring to breed. Of the remaining birds,

≥80% flocked with resident birds by the end of the winter. The flocking that occurred between birds allowed the translocated birds to locate the lek site and breed. After breeding, nest site selection and reproductive efforts were recorded.

Schroeder et al. (1999) compiled 14 studies of resident Sage-Grouse hens and found the average nest success to be 42.6%. Average nest success of translocated hens in this study during the past two years was 78%. Successful nesting can be attributed to excellent nesting habitat and to a lack of predators, namely the red fox and common raven (*Corvus corvax*). A total of 11 chicks were recruited to the fall population in 2003. By the end of August 2004, a total of 77 chicks (38 chicks from 2003 hens and 39 chicks from 2004 hens) were recruited to the fall population.

To date, the success of the translocations cannot be underestimated; yet, more birds are needed to transition this population into one of ≥500 breeding birds. In summary, the Strawberry Valley Sage-Grouse population has doubled because of these translocations and the overall recovery strategy. Before the translocations, we saw small annual declines in lek counts; now we've seen the highest lek count on the remaining Road Hollow lek since 1987. The breeding that has occurred on that lek, between the Parker Mountain hens and the Strawberry Valley cocks, will increase the genetic diversity of the population. With nest initiation and success high, and mortality rates low, optimal reproductive output will be the result.

The overall strategy for recovering Sage-Grouse in the Strawberry Valley is working. Translocations in conjunction with predator control, habitat protection, habitat improvements, and disease monitoring are all part of the effort to help the population increase. Continued translocations will increase the number of breeding females and thus ensure excellent reproductive output for years to come.

Reports

Quarterly progress reports will continue to be compiled by Brigham Young University. Reports will outline the number of birds captured and transplanted, including sexes and ages, locations of transplants, and overall success of the project. Telemetry data showing habitat use areas, survival and reproduction will also be reported.

Literature Cited

Bambrough, D. J. and J. T. Flinders. 2001. Progress report: Strawberry Valley Sage-Grouse recovery project. Brigham Young University, Provo, Utah.

Barber, H. A. 1991. Strutting behavior, distribution, and habitat selection of sage grouse in Utah. Master's Thesis, Brigham Young University, Provo, Utah.

Baxter, R. J. and J. T. Flinders. 2003. Progress report: Strawberry Valley Sage-Grouse recovery project. Brigham Young University, Provo, Utah.

Beck, J. L., D. L. Mitchell, and B. D Maxfield. 2003. Distribution and status of Sage-Grouse in Utah, 1959-2000. Western North American Naturalist 63(2): 203-214.

Beck, J. L., and D. L. Mitchell. 2000. Influences of livestock grazing on sage grouse habitat. Wildlife Society Bulletin 28:993-1002.

Beck, J. L., and D. L. Mitchell. 1997. Brief guidelines for maintaining and enhancing sage grouse habitat on private lands in Utah. Utah technical notes: UT190-7-3. U.S. Natural Resources Conservation Service, Salt Lake City, Utah.

Bunnell, K. D. 2000. Ecological factors limiting Sage-Grouse recovery and expansion in Strawberry Valley, Utah. Master's Thesis, Brigham Young University, Provo, Utah.

Griner, L. A. 1939. A study of the Sage-Grouse (*Centrocercus urophasianus*), with special reference to life history, habitat requirements, and numbers and distribution. Master's Thesis, Utah State Agricultural College, Logan, Utah.

Schroeder, M. A., J. R. Young, and C. E. Braun. 1999. Sage grouse (*Centrocercus urophasianus*). Pages 1-28 in A. Poole and F. Gill, editors. The birds of North America, No. 425. The birds of North America, Philadelphia, Pennsylvania.

Smith, R. B., and C. L. Greenwood. 1983. Strawberry Valley terrestrial wildlife inventory Strawberry Valley Project. Utah Division of Wildlife Resources, Springville, Utah.

Utah Fish and Game. 1950. Stories of old timers. Utah Fish and Game Bulletin. April/May.

U.S. Forest Service. 1990. Uinta National Forest Strawberry Valley Management Area Final Environmental Impact Statement. U.S. Department of Agriculture, Forest Service, Uinta National Forest, Provo, Utah.

U.S. Forest Service. 1995. Restoring Strawberry, the Pure Valley: Report on Five Years of Mitigation and Enhancement in the Strawberry Valley. USDA Forest Service, Uinta National Forest, Heber Ranger District, Heber City, Utah.

Utah Reclamation Mitigation and Conservation Commission and U.S. Forest Service. 1997. Strawberry Valley Assessment, Final. USDA Forest Service, Forest Service, Uinta National Forest, Provo, Utah.

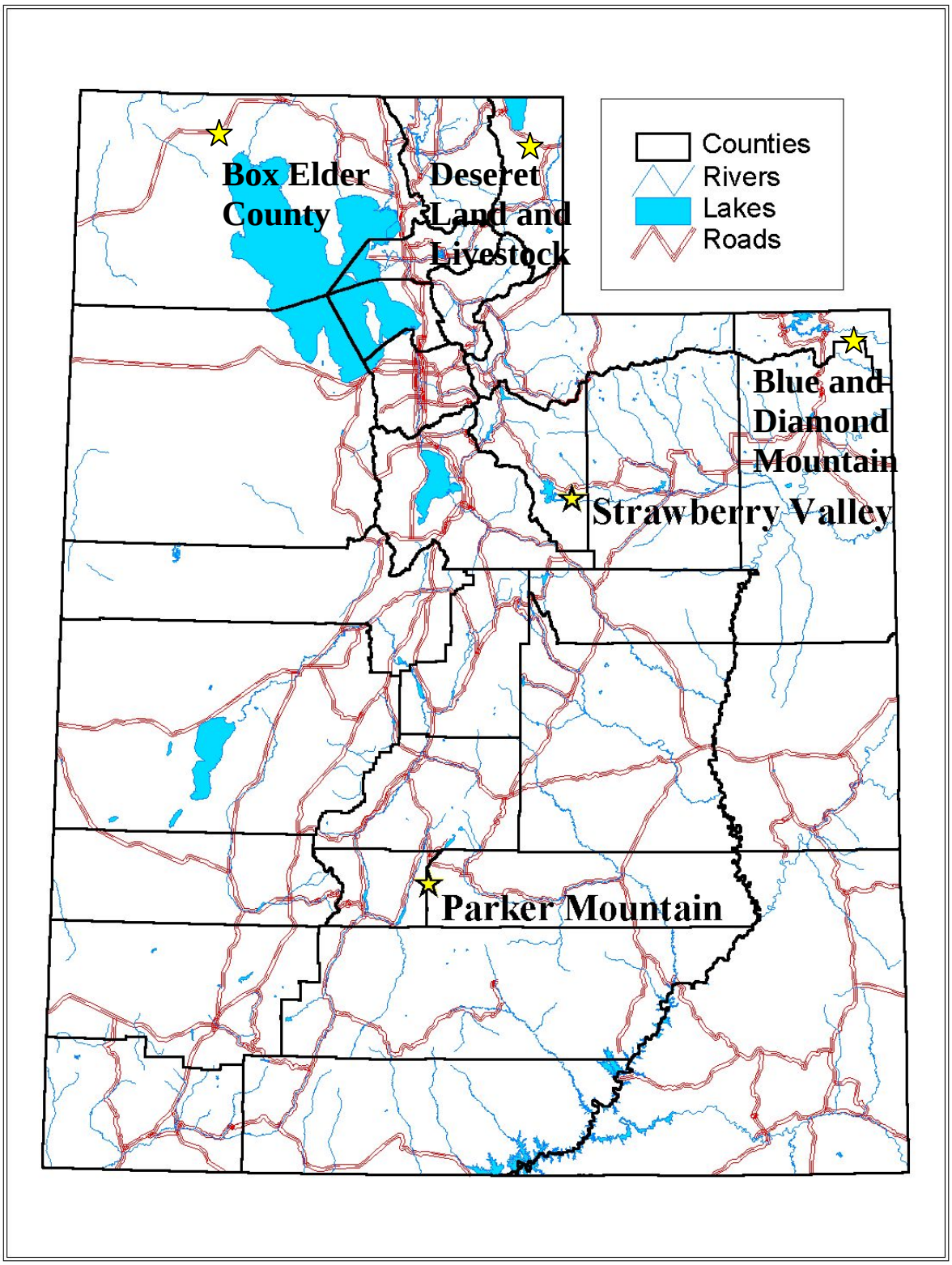
Wallestad, R. O. 1975. Life history and habitat requirements of sage grouse in central Montana. Montana Fish and Game Department, Technical Bulletin, Helena, Montana.

Welch, B. L., C. L. Cox, and T. K. Sales. 1995. Strutting sounds and strutting posturing of two Utah sage grouse populations. U.S. Department of Agriculture, Forest Service, Intermountain Research Station, Research Paper INT-485.

Welch, B. L., F. J. Wagstaff, and R. L. Williams. 1990. Sage-Grouse status and recovery plan for Strawberry Valley, Utah. U.S. Department of Agriculture, Forest Service, Intermountain Research Station, Research Paper INT-430.

Young, J. R., J. W. Hupp, J. W. Bradbury, and C. E. Braun. 1994. Phenotypic divergence of secondary sexual traits among sage grouse, *Centrocercus urophasianus*, populations. Animal Behavior. 47:1353-1362.

Zablan, M. A. 1993. Evaluation of sage grouse banding program in North Park, Colorado. Thesis, Colorado State University, Fort Collins, Colorado.


Box Elder County
Deseret Land and Livestock
Blue and Diamond Mountain
Strawberry Valley
Parker Mountain
Counties
Rivers
Lakes
Roads